APPLICATION PACKET

FOR A

CRUSHING/SCREENING GENERAL

PERMIT

Arizona Department of Environmental Quality

Air Quality Division

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I. INTRODUCTION

This manual has been developed specifically for applicants applying for coverage under the Crushing/Screening General Permit in lieu of an individual permit. However, this manual is not intended as a substitute for the Arizona Air Quality Regulations.

I. APPLICABILITY

1. The Crushing/Screening General Permit, hereafter referred to as General Permit covers crushing/screening plants (non-metallic mineral processing plants belonging to major group 14 as described in the Standard Industrial Classification Manual, 1987) that are subject to Federal New Source Performance Standards (NSPS), State regulations, and/or County Regulations. The General Permit covers crushing/screening plants which have a Potential To Emit (PTE) of PM_{10} no greater than 13.64 tons per year (TPY) from all process emission such as crushers, screens, conveyor belt transfer points, and lime silos considering pollution controls and operating only sixteen hours per day.

2. This General Permit also covers crushing/screening plants which have internal combustion engines whose total Nitrogen Dioxide NO_2 emissions do not exceed 90 TPY considering operating only sixteen hours per day.

B. AUTHORIZATIONS TO OPERATE

1. If the applicant meets the criteria for coverage under this General Permit, an Authorization To Operate (ATO) will be issued for each crushers, screen, internal combustion engine, and lime silo.

2. If the Applicant is a rental company, the Applicant will apply for coverage under this General Permit by grouping together representative crushers, screens, internal combustion engines, and associated equipment that are typical of the plants that are rented out to the crushing/screening industry. This grouping will be limited in size by the 13.64 TPY of PM_{10} and the 90 TPY NO_2 limits and will then be considered as one coverage under this General Permit. The Applicant will continue grouping equipment as previously mentioned until all crushers, screens, internal combustion engines, and associated equipment are covered under this General Permit. Depending upon the amount of rental equipment that is owned by the applicant, it is possible that the Applicant may end up with multiple coverages under this General Permit.

C. JURISDICTION

Pursuant to A.R.S. §49-480 the Air Quality Control Districts (AQCD) of Maricopa, Pima, and Pinal Counties may administer, inspect, and enforce the General Permit and issue ATOs for sources under their jurisdiction.

1. Stationary Sources

Stationary sources wishing to obtain coverage under the General Permit shall apply to the Arizona Department of Environmental Quality (ADEQ), except for stationary sources which are located exclusively in Maricopa, Pima, or Pinal Counties. If the stationary source is located in one of these three counties, the county agency will process the application for coverage under the General Permit.

2. Portable Sources

Portable sources wishing to obtain coverage under the General Permit shall apply to the Arizona Department of Environmental Quality (ADEQ), except for portable sources which will operate for the duration of the General Permit solely in Maricopa, Pima, or Pinal County. If the portable source will operate for the duration of the General Permit in one of these three counties, the county agency will process the application for coverage under the General Permit.

3. If the applicant has any questions regarding jurisdictional issues, please contact ADEQ.

D. PERMIT ISSUANCE TIME FRAME

According to A.A.C. R18-1-525, ADEQ has 21 business days to determine if the submitted general permit application is complete. Once the application is determined to be complete, the department has 103 business days to make a licensing decision on the application. The counting of the days can be suspended by the Department upon the determination that additional information is needed. In such a case, a letter will be sent to the applicant informing them that the counting of days has been suspended, and will also specify what additional information is necessary to continue processing the application.

II APPLICATION INSTRUCTIONS

This section of the manual helps the applicant assemble a complete application, make the appropriate calculations, complete a compliance plan/certification, and submit all information in a manner which will expedite applications review.

ADEQ recognizes that crushing and screening plants, in general, move and change equipment configuration frequently. The information provided in the application should reflect the current situation.

Please read all sections of this manual very carefully. Provide all information requested. The final application submitted should include all the forms in the application packet and any attachments necessary to submit all information (i.e. map, plot plan, etc.). Make additional copies of the forms as necessary to be sure all information is included.

A. STEP 1: Standard Application Form

A.A.C. R18-2-304 requires applicants to submit the Standard Application Form and Filing Instructions. The first step to fulfilling the submittal requirements for coverage under the General Permit is properly completing FORM 1 "STANDARD APPLICATION FORM". Items 1 through 5 of the application form are self-explanatory. The rest are explained below in detail:

1. Item #6 asks for the Plant/Site Manager or Contact Person. This should be the person the ADEQ may contact for additional information.

2. Item #7 is necessary to determine the location of the plant. The township/range/section may be substituted for the latitude/longitude coordinates, in degrees, minutes and seconds.

3. Item #8, the "Equipment Purpose" should describe what is produced at the plant.

4. Under Item #9, if the "other" box is checked, please be specific as to the type of organization.

5. Item #10 asks for the Permit Application Basis which indicates what type of permit is necessary. The following steps should be utilized when filling out Item #10:

    a. If the equipment has never been permitted, then the boxes titled "New Source" and "General Permit" should be checked.

    b. If the equipment is already permitted under an individual permit and you are applying for coverage under the General Permit, then the boxes titled "Renewal of Existing Permit" and "General Permit" should be checked and the current permit number must be included on the line titled "For renewal or modification, include existing permit number".

    c. If the equipment is portable, then the box titled "Portable Source" should be checked.

    d. For new sources the "Date of Commencement of Construction or Modification" is the expected date that construction will begin. For existing sources this date need not be defined.

    e. If there is any chance that the equipment will be leased out, answer "yes" to the last part of item #10.

    f. The "Standard Industrial Classification Code" for crushing and screening plants is 1499.

g. The "State Permit Class" for crushing and screening plants utilizing this application packet is "II".

6. The "Responsible Official" referred to in Item #11 is the owner or a partner of the company in most cases. It may also be the president or vice-president of larger companies. If there is a question as to who the responsible official is, contact ADEQ for more information.

B. STEP 2: Emission Calculations

The amount of pollution emitted from the crushing/screening operations and internal combustion engines must be submitted. FORM 2 should be used to calculate these emissions. The emission factors in this application are based on EPA's Air Pollution Engineering Manual, AP-42 (Sections 3.3, 3.4, and 11.12) and include the usage of wet suppression.

C. STEP 3: Equipment List

1. ADEQ needs to be able to identify all pieces of equipment covered under the General Permit. Use FORM 3 to provide a list of all pieces of equipment to be permitted including control equipment and internal combustion engines (this does not include internal combustion engines associated with motor driven vehicles). **The list should include not only the type of equipment, but also the make, model, maximum rated capacity, serial number, manufacture date, and equipment identification number (if available) of each piece of equipment.** Please make additional copies if necessary.

2. In many cases, the equipment will not yet have been purchased at the time of application. If this is the case, the serial number will not need to be listed, but an equipment identification number will need to be provided. The equipment identification number must be clearly stenciled on each piece of equipment to be permitted before such equipment is installed.

D. STEP 4: Air Pollution Controls

All pollution control equipment and pollution control procedures must be described in order to satisfy this submittal requirement. FORM 4 can be used to submit the necessary pollution control information.

E. STEP 5: Operation And Maintenance Plan

An operation and maintenance plan must be submitted by all applicants. FORM 5 can be used to submit a complete operation and maintenance plan.

F. STEP 6: BACT Determination for Internal Combustion Engine Operation in Maricopa County

This form must be completed by those applicants who intend to operate internal combustion engines in Maricopa County in such a manner as to trigger the requirement to use Best Available Control Technology.

G. STEP 7: Compliance Plan/Certification

A compliance plan/certification must be submitted by all applicants. FORM 7 can be used to submit a complete compliance plan/certification.

H. STEP 8: Map Of Plant Location

Please provide a map of the current plant location, depicting the plant perimeter and point of entry. This may be a city map, topographical map or any map which clearly shows the location. Mark the location of the plant on the map and submit it as part of the application. The map should include driving directions to the plant site from the nearest highway.

I. STEP 9: Plot Plan

Please provide a plot plan of the current equipment configuration. A plot plan is an aerial drawing of the plant property drawn to scale or dimensions shown. It should include:

1. A schematic of the typical equipment layout;

2. location of stacks and all tanks, silos, bins, conveyors, storage piles, control equipment, and other equipment;

3. a scale, if the drawing is to scale; and

4. photographs of the equipment if available.

J. STEP 10: Process Description

Please provide a process description or process flow diagram. A process description is a brief description of the product manufacturing process. This includes a description of how the process material is received, processed, stored, and mixed, as well as how the final products are handled.

K. STEP 10: Filing Instructions

1. An Application Fee of $500 must be submitted by all applicants. Please make your check or money or payable to ADEQ. The Application Fee must accompany each application submittal.

2. Please mail FORMS 1 through 6 of the application packet and the $500 Application Fee to the following address:

Arizona Department Of Environmental Quality
Air Quality Division
1110 West Washington
Phoenix, Arizona 85007

3. Please remember to make photo copies of FORMS 1 through 7 of the application packet before mailing.

4. Pages 1 through 4 of the application packet should be kept by the applicant for reference purposes.

FORM 1: STANDARD PERMIT APPLICATION FORM
ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
Air Quality Division
1110 West Washington Ë Phoenix, AZ 85007 Ë Phone: (602) 771-2338

STANDARD PERMIT APPLICATION FORM

(As required by A.R.S. § 49-426, and Chapter 2, Article 3, Arizona Administrative Code)

1. Permit to be issued to: (Business license name of organization that is to receive permit) _____

   _____

2. Mailing Address: _____

   City: _____ State: _____ ZIP: _____

3. Previous Company Name: (if applicable) _____

4. Name (or names) of Owners/Principals: _____

   FAX #: _____ Phone: _____

5. Name of Owner's Agent: _____

   FAX #: _____ Phone: _____

6. Plant/Site Manager or Contact Person/Title: _____

   FAX #: _____ Phone: _____

7. Proposed Plant Name: _____

   Proposed Plant Location/Address: _____

   City: _____ County: _____ ZIP: _____

   Indian Reservation (if applicable): _____

   Latitude/Longitude, Elevation: _____

8. Equipment Name/Purpose: _____

   Equipment List/Description: _____

   _____

   _____

   _____

9. Type of Organization:
   ~ Corporation ~ Individual Owner
   ~ Partnership ~ Government Entity (Government Facility Code: _____)
   ~ Other _____

10. Permit Application Basis: ~ New Source ~ Revision ~ Renewal of Existing Permit
    (Check all that apply.) ~ Portable Source : General Permit

    For renewal or modification, include existing permit number (and exp. date): _____

    Date of Commencement of Construction or Modification: _____

    Is **any** of the equipment to be leased to another individual or entity? ~ Yes ~ No

    Standard Industrial Classification Code: 1499 State Permit Class: II

11. Signature of Responsible Official of Organization: _____

    Official Title of Signer: _____

12. Typed or Printed Name of Signer: _____

    Date: _____ Telephone Number: _____

FORM 2: EMISSION CALCULATIONS

1. CRUSHING/SCREENING OPERATIONS

In order for ADEQ to fully evaluate a General Permit application, the amount of pollution emitted from the crushing/screening operations must be submitted. This section of the manual is intended to guide the applicant through the emission calculations. Emissions from crushing/screening operations consist of particulate matter in the form of total suspended particulates (TSP) and PM_{10}. PM_{10} is particulate matter which has an average diameter less than 10 micrometers. The applicant should make additional copies of any pages necessary to submit the total emissions from all crushing/screening operations.

a. Calculating Emissions From Batch Drop Operations

i. Examples of batch drop operations include truck dumping onto a storage pile, loading out from a storage pile to a truck with a front-end loader, or front-end loader dumping onto a storage pile. Batch drop operations do not include the loading of feed hoppers. TABLE 2 has been designed to calculate the emissions from the loading of feed hoppers.

ii. TABLE 1 must be completed, in order to calculate the PM_{10} emissions from batch drop operation(s). To calculate emissions from batch drop operations, the maximum throughput rate of the plant listed in column **(a)** is multiplied by the emission and conversion factor listed in columns **(b)** and **(c)**.

iii. Once the emissions have been calculated for all batch drop operations, the emissions must be summed up and placed in the box labeled "Total PM_{10} Emissions".

TABLE 1: PM_{10} EMISSIONS FROM BATCH DROP OPERATIONS ***FOR AGENCY USE ONLY***

Maximum Throughput Rate **(ton/hr)** ***(a)***	**Emission Factor** **(lb/ton)** ***(b)***	**Conversion Factor** **(ton-hr/Lb-yr)** ***(c)***	**Emissions** **(ton/yr)** ***(a x b x c)***
	0.00011	2.92	
	TOTAL PM_{10} EMISSIONS (ton/yr):		

Reviewed By	***Date***

FORM 2: EMISSION CALCULATIONS, CONTINUED

b. Calculating Emissions From The Loading Of Feed Hoppers

i. TABLE 2 must be completed, in order to calculate the PM_{10} emissions from the loading of feed hopper(s). To calculate emissions from the loading of feed hoppers, the maximum throughput rate of each feed hopper listed in column **(a)** is multiplied by the emission and conversion factor listed in columns **(b)** and **(c)**.

ii. Once the emissions have been calculated for the loading of all feed hoppers, the emissions must be summed up and placed in the box labeled "Total PM_{10} Emissions".

TABLE 2: PM_{10} EMISSIONS FROM THE LOADING OF FEED HOPPERS

Serial # or Equipment ID #	Maximum Throughput Rate (ton/hr) *(a)*	Emission Factor (lb/ton) *(b)*	Conversion Factor (ton-hr/Lb-yr) *(c)*	Emissions (ton/yr) *(a x b x c)*
		0.000055	2.92	
		0.000055	2.92	
		0.000055	2.92	
		0.000055	2.92	
		0.000055	2.92	
		TOTAL PM_{10} EMISSIONS (ton/yr):		

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FORM 2: EMISSION CALCULATIONS, CONTINUED

c. Calculating Emissions From Crushers

i. TABLE 3 must be completed, in order to calculate the PM_{10} emissions from the crusher(s). To calculate emissions from the crusher(s), the maximum throughput rate of each crusher listed in column **(a)** is multiplied by the emission and conversion factors listed in columns **(b)** and **(c)**. Once the emissions have been calculated for each crusher, the emissions from all the crushers must be summed up and placed in the box labeled "Total PM_{10} Emissions".

ii. Primary crushers are defined as any crusher that reduces material to approximately 3 to 12 inches in diameter. Secondary crushers are defined as any crusher that reduces material to approximately 1 to 4 inches in diameter. Tertiary crushers are defined as any crusher that reduces material to approximately 3/16th to 1 inch in diameter.

TABLE 3: PM_{10} EMISSIONS FROM CRUSHERS

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Serial # or Equipment ID #	Maximum Throughput Rate (ton/hr) *(a)*	Emission Factor (lb/ton) *(b)*	Conversion Factor (ton-hr/Lb-yr) *(c)*	Emissions (ton/yr) *(a x b x c)*
PRIMARY CRUSHERS				
		0.00059	2.92	
		0.00059	2.92	
		0.00059	2.92	
		0.00059	2.92	
		0.00059	2.92	
SECONDARY CRUSHERS				
		0.00059	2.92	
		0.00059	2.92	
		0.00059	2.92	
		0.00059	2.92	
		0.00059	2.92	
TERTIARY CRUSHERS				
		0.00059	2.92	
		0.00059	2.92	
		0.00059	2.92	
		0.00059	2.92	
		0.00059	2.92	
		TOTAL PM_{10} EMISSIONS (ton/yr):		

Reviewed By	*Date*

FORM 2: EMISSION CALCULATIONS, CONTINUED

d. Calculating Emissions From Screens

i. TABLE 4 must be completed in order to calculate the PM_{10} emissions from the screen(s). To calculate emissions from the screen(s), the maximum throughput rate of each screen listed in column **(a)** is multiplied by the emission and conversion factors listed in columns **(b)** and **(c)**. Once the emissions have been calculated for each screen, the emissions from all the screens must be summed up and placed in the box labeled "Total PM_{10} Emissions".

ii. Fines screens are defined as any screen that sizes material up to 3/16th inches in diameter.

TABLE 4: PM_{10} EMISSIONS FROM SCREENS

FOR AGENCY USE ONLY

Serial # or Equipment ID #	Maximum Throughput Rate (ton/hr) *(a)*	Emission Factor (lb/ton) *(b)*	Conversion Factor (ton-hr/Lb-yr) *(c)*	Emissions (ton/yr) *(a x b x c)*
SCREENING				
		0.00084	2.92	
		0.00084	2.92	
		0.00084	2.92	
		0.00084	2.92	
		0.00084	2.92	
FINES SCREENING				
		0.0021	2.92	
		0.0021	2.92	
		0.0021	2.92	
		0.0021	2.92	
		0.0021	2.92	
		TOTAL PM_{10} EMISSIONS (ton/yr):		

Reviewed By	*Date*

e. Calculating Emissions From Stackers And Transfer Points

i. TABLE 5 must be completed, in order to calculate the PM_{10} emissions from the stacker(s) and transfer point(s). To calculate emissions from the stacker(s), the maximum throughput rate of each stacker listed in column **(a)** is multiplied by the emission and conversion factors listed in columns **(b)** and **(c)**. To calculate emissions from the transfer point(s), the number of transfer point(s) listed in column **(a)** is multiplied by the maximum throughput rate, the emission factor, and the conversion factor listed in columns **(b)**, **(c)**, and **(d)**. A transfer point is a point of emission where the process material is airborne (e.g. between two conveyors).

ii. Once the emissions have been calculated for each stacker and transfer point, the emissions from all the stackers and transfer points must be summed up and placed in the box labeled "Total PM_{10} Emissions".

TABLE 5: PM_{10} EMISSIONS FROM STACKERS AND TRANSFER POINTS

Serial # or Equipment ID #	Maximum Throughput Rate (ton/hr) *(a)*	Emission Factor (lb/ton) *(b)*	Conversion Factor (ton-hr/Lb-yr) *(c)*	Emissions (ton/yr) *(a x b x c)*
STACKERS				
		0.000055	2.92	
		0.000055	2.92	
		0.000055	2.92	
		0.000055	2.92	
		0.000055	2.92	
Number of Transfer Points *(a)*	**Maximum Throughput Rate (ton/hr)** *(b)*	**Emission Factor (lb/ton)** *(c)*	**Conversion Factor (ton-hr/Lb-yr)** *(d)*	**Emissions (ton/yr)** *(a x b x c x d)*
TRANSFER POINTS				
		0.000048	2.92	
		0.000048	2.92	
		0.000048	2.92	
		0.000048	2.92	
		0.000048	2.92	
		TOTAL PM_{10} EMISSIONS (ton/yr):		

FOR AGENCY USE ONLY

Reviewed By	*Date*

FORM 2: EMISSION CALCULATIONS, CONTINUED

f. Calculating Emissions From Lime Silos

TABLE 6 must be completed, in order to calculate the PM_{10} emissions from the lime silo operation(s). To calculate emissions from the loading of the lime silo(s), the maximum throughput rate of the plant listed in column **(a)** is multiplied by the maximum fraction of lime added by weight to the material, the control factor, the emissions factor, and the conversion factor listed in columns **(b)**, **(c)**, **(d)**, and **(e)**. To calculate emissions from the lime discharging onto conveyor belts, the number of discharge point(s) listed in column **(a)** is multiplied by the maximum throughput rate of the plant, the maximum fraction of lime added by weight to the material, the emission factor, and conversion factor listed in columns **(b)**, **(c)**, **(d)**, and **(e)**. Once the emissions have been calculated for each lime silo, the emissions from all the lime silo activities must be summed up and placed in the box labeled "Total PM_{10} Emissions".

TABLE 6: PM_{10} EMISSIONS FROM LIME SILOS

ATO #	Maximum Throughput Rate (ton/hr) *(a)*	Maximum Amount Of Lime Added By Weight (percentage / 100) *(b)*	Control Efficiency of Baghouse Or Wet Scrubber (1 - [percentage / 100]) *(c)*	Emission Factor (lb/ton) *(d)*	Conversion Factor (ton-hr/Lb-yr) *(e)*	Emissions (ton/yr) *(a x b x c x d x e)*
PNEUMATIC LOADING OF LIME SILO						
				0.11	2.92	
				0.11	2.92	
				0.11	2.92	
				0.11	2.92	
Number of Discharge Points *(a)*	**Maximum Throughput Rate (ton/hr)** *(b)*	**Maximum Amount Of Lime Added By Weight (percentage / 100)** *(c)*		**Emission Factor (lb/ton)** *(d)*	**Conversion Factor (ton-hr/Lb-yr)** *(e)*	**Emissions (ton/yr) *(a x b x c x d x e)***
DISCHARGING OF LIME ONTO CONVEYOR BELTS						
				0.000048	2.92	
				0.000048	2.92	
				0.000048	2.92	
				0.000048	2.92	
				TOTAL PM_{10} EMISSIONS: (ton/yr)		

FOR AGENCY USE ONLY

Reviewed By	*Date*

FORM 2: EMISSION CALCULATIONS, CONTINUED

g. General Permit Applicability Determination For Crushing/Screening Operations

i. In order for ADEQ to determine if your crushing/screening operation can be covered under the General Permit, the Total PM_{10} Emissions from batch drop operations, feed hoppers, crushers, screens, stackers, transfer points, and lime silos must be less than 13.64 tons/yr. To determine if the Total PM_{10} emissions from the crushing/screening operations is less than 13.64 tons/yr, sum all the boxes labeled "Total PM_{10} Emissions" on TABLES 1, 2, 3, 4, 5, and 6 and place the result in TABLE 7 below:

TABLE 7: TOTAL PM_{10} EMISSIONS FROM ALL EMISSION UNITS

EMISSION UNIT	TOTAL PM_{10} EMISSIONS (ton/yr)
Batch Drop Operations (TABLE 1 total)	
Loading of Feed Hoppers (TABLE 2 total)	
Crushers (TABLE 3 total)	
Screens (TABLE 4 total)	
Stackers and Transfer Points (TABLE 5 total)	
Lime Silos (TABLE 6 total)	
TOTAL PM_{10} EMISSIONS FROM ALL EMISSION UNITS (ton/yr):	

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ii. If the total PM_{10} emissions in TABLE 7 above are less than 13.64 ton/yr, the applicant qualifies for coverage under the General Permit.

iii. If the total PM_{10} emissions in TABLE 7 above are greater than 13.64 ton/yr, the applicant does not qualify for coverage under the General Permit and must submit an application to ADEQ for an individual permit.

FORM 2: EMISSION CALCULATIONS, CONTINUED

2. INTERNAL COMBUSTION ENGINES

In order for ADEQ to fully evaluate a General Permit application, the amount of pollution emitted from the internal combustion engine(s) must be submitted (this does not include mobile equipment such as trucks and front end loaders). This section of the manual is intended to guide the applicant through the emission calculations. The emission factors are based on EPA's Air Pollution Engineering Manual, AP-42. The applicant should make additional copies of any pages necessary to submit the total emissions from all internal combustion engines.

a. Calculating Emissions From Internal Combustion Engines Below 447 kW (600 hp) While Burning Gasoline

TABLE 8 must be completed, in order to calculate the emissions from internal combustion engines which have a power output less than or equal to 447 kW (600 hp) and use gasoline for fuel. Emissions from the internal combustion engines are calculated by taking the power output of the internal combustion engine in horsepower listed in column **(a)** and multiplying it by the emission and conversion factors listed in columns **(b)** and **(c)**.

TABLE 8: EMISSIONS FOR INTERNAL COMBUSTION ENGINES LESS THAN OR EQUAL TO 447 KW (600 HP) WHILE BURNING GASOLINE

Serial # or Equipment ID #	Horsepower (HP) *(a)*	Pollutant	Emission Factor (lb/HP-hr) *(b)*	Conversion Factor (ton-hr/Lb-yr) *(c)*	Emissions (ton/yr) *(a x b x c)*
		Nitrogen Dioxide	0.011	2.92	
		Nitrogen Dioxide	0.011	2.92	
		Nitrogen Dioxide	0.011	2.92	
		Nitrogen Dioxide	0.011	2.92	
		Nitrogen Dioxide	0.011	2.92	
			TOTAL NO_x EMISSIONS (ton/yr)		

FOR AGENCY USE ONLY

Reviewed By	*Date*

FORM 2: EMISSION CALCULATIONS, CONTINUED

b. Calculating Emissions From Internal Combustion Engines Below 447 kW (600 hp) While Burning Diesel

TABLE 9 must be completed, in order to calculate the emissions from internal combustion engines which have a power output less than or equal to 447 kW (600 hp) and use diesel for fuel. Emissions from the internal combustion engines are calculated by taking the power output of the internal combustion engine in horsepower listed in column **(a)** and multiplying it by the emission and conversion factors listed in columns **(b)** and **(c)**.

TABLE 9: EMISSIONS FOR INTERNAL COMBUSTION ENGINES LESS THAN OR EQUAL TO 447 KW (600 HP) WHILE BURNING DIESEL

Serial # or Equipment ID #	Horsepower (HP) *(a)*	Pollutant	Emission Factor (lb/HP-hr) *(b)*	Conversion Factor (ton-hr/Lb-yr) *(c)*	Emissions (ton/yr) *(a x b x c)*
		Nitrogen Dioxide	0.031	2.92	
		Nitrogen Dioxide	0.031	2.92	
		Nitrogen Dioxide	0.031	2.92	
		Nitrogen Dioxide	0.031	2.92	
		Nitrogen Dioxide	0.031	2.92	
			TOTAL NO_2 EMISSIONS (ton/yr)		

FOR AGENCY USE ONLY

Reviewed By	*Date*

c. Calculating Emissions From Internal Combustion Engines Greater Than 447 kW (600 hp) While Burning Diesel

TABLE 10 must be completed, in order to calculate the emissions from internal combustion engines which have a power output greater than 447 kW (600 hp) and use diesel for fuel. Emissions from the internal combustion engines are calculated by taking the power output of the internal combustion engine in horsepower listed in column **(a)** and multiplying it by the emission and conversion factors listed in columns **(b)** and **(c)**.

TABLE 10: EMISSIONS FOR INTERNAL COMBUSTION ENGINES GREATER THAN 447 KW (600 HP) WHILE BURNING DIESEL

Serial # or Equipment ID #	Horsepower (HP) *(a)*	Pollutant	Emission Factor (lb/HP-hr) *(b)*	Conversion Factor (ton-hr/Lb-yr) *(c)*	Emissions (ton/yr) *(a x b x c)*
		Nitrogen Dioxide	0.024	2.92	
		Nitrogen Dioxide	0.024	2.92	
		Nitrogen Dioxide	0.024	2.92	
		Nitrogen Dioxide	0.024	2.92	
		Nitrogen Dioxide	0.024	2.92	
			TOTAL NO_2 EMISSIONS (ton/yr)		

FOR AGENCY USE ONLY

Reviewed By	*Date*

FORM 2: EMISSION CALCULATIONS, CONTINUED

d. General Permit Applicability Determination For Internal Combustion Engines

i. In order for ADEQ to determine if your crushing/screening operation can be covered under the General Permit, the total Nitrogen Dioxide emissions from all internal combustion engines can not exceed 90 tons per year. To determine if the total Nitrogen Dioxide emissions from all internal combustion engines is less than 90 tons per year, sum all the boxes labeled "Total NO_2 Emissions" on TABLES 8, 9, and 10 and place the result in TABLE 11 below:

TABLE 11: TOTAL NO_2 EMISSIONS FROM ALL INTERNAL COMBUSTION ENGINES

EMISSION UNIT	TOTAL NO_2 EMISSIONS (ton/yr)
Internal Combustion Engines Less Than Or Equal To 447 KW (600 HP) While Burning Gasoline (TABLE 8 total)	
Internal Combustion Engines Less Than Or Equal To 447 KW (600 HP) While Burning Diesel (TABLE 9 total)	
Internal Combustion Engines Greater Than 447 KW (600 HP) While Burning Diesel (TABLE 10 total)	
TOTAL NO_x EMISSIONS FROM ALL INTERNAL COMBUSTION ENGINES (ton/yr):	

FOR AGENCY USE ONLY

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ii. If the total NO_2 emissions in TABLE 11 above are less than 90 ton/yr, the applicant qualifies for coverage under the General Permit.

iii. If the total NO_2 emissions in TABLE 11 above are greater than 90 ton/yr, the applicant does not qualify for coverage under the General Permit and must submit an application to ADEQ for an individual permit. However, if the applicant can demonstrate that the NO_2 emissions from all internal combustion engines will not exceed 90 tons per year (based upon operating 16 hours per day) then the applicant may qualify for coverage under the General Permit. This shall be demonstrated by the applicant submitting a calculation of the maximum potential to emit for NO_2 using alternative acceptable emission calculation methods.

FORM 2: EMISSION CALCULATIONS, CONTINUED

3. NON-POINT SOURCES

a. Calculating Emissions From Aggregate Storage Piles

Table 12 must be completed, in order to calculate the PM_{10} emissions from the aggregate storage pile(s). To calculate emissions from the aggregate storage pile(s), the total number of aggregate storage pile(s) listed in column **(a)** is multiplied by the emission and conversion factors listed in columns **(b)** and **(c)**.

TABLE 12: PM_{10} EMISSIONS FROM AGGREGATE STORAGE PILES

Total Number of Aggregate Storage Piles (a)	Emission Factor (lb/hr) (b)	Conversion Factor (ton-hr/Lb-yr) (c)	Emissions (ton/yr) (a x b x c)
	0.000233	4.38	

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Reviewed By	*Date*

b. Calculating Emissions From Haul Roads

Table 13 must be completed, in order to calculate the PM_{10} emissions from the haul road(s). To calculate emissions from the haul road(s), the average number of vehicle miles traveled in an hour listed in column **(a)** is multiplied by the emission and conversion factors listed in columns **(b)** and **(c)**.

TABLE 13: PM_{10} EMISSIONS FROM HAUL ROADS

Average Number of Vehicle Miles Traveled in an Hour (a)	Emission Factor (lb/VMT) (b)	Conversion Factor (ton-hr/Lb-yr) (c)	Emissions (ton/yr) (a x b x c)
	0.19	4.38	

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FORM 3: EQUIPMENT LIST

Type of Equipment	Maximum Rated Capacity (ton/hr)	Make	Model	Serial Number	Date of Manufacture	Equipment I.D. Number

FORM 4: AIR POLLUTION CONTROLS

1. In order for ADEQ to fully evaluate a General Permit application, the type of air pollution controls utilized must be submitted. This section of the manual is intended to assist the applicant in listing the air pollution controls that are utilized at the plant. TABLE 14 must be completed by check marking each emission point(s) with the appropriate air pollution control device. Generally emissions are controlled with spray bars, sprinkler systems and a water truck. In addition, some operators choose to use a chemical surfactant or dust palliative. Shaded boxes represent air pollution control devices which are typically not utilized with the referenced emission point(s).

TABLE 14: AIR POLLUTION CONTROLS CHECKLIST

AIR POLLUTION CONTROL DEVICE	EMISSION POINT							
	Crushers	Screens	Transfer Points	Stackers	Haul Roads	Storage Piles	Other:	Other:
Spray Bars								
Sprinklers								
Water Truck								
Water Hose								
Venturi Scrubber								
Low-Energy Scrubber								
Baghouse								
Other:								
Other:								

2. For each Venturi Scrubber, Low-Energy Scrubber, or Baghouse please provide the following information. The manufacturer of the control device should be able to provide you with the necessary information including the rated efficiency of the device. If more than one device is used, make copies of this page and complete one for each device:

   a. Type of equipment (e.g. venturi scrubber, low-energy scrubber, baghouse etc.): _____

   b. Rated efficiency of equipment (in percent): _____

   c. If the device has a stack emission point:

      i. Stack flowrate (cubic feet per second): _____

      ii. Inside diameter of the stack (feet): _____

FORM 5: OPERATION AND MAINTENANCE PLAN

In order for the Applicant to be granted coverage under the Crushing and Screening General Permit, the Applicant must submit and agree to operate in accordance with an acceptable Operation and Maintenance (O&M) plan which identifies the procedures utilized to maintain its air pollution controls. This section of the manual is intended to assist the applicant in the development of their O&M plan. Mark the appropriate boxes that best describe the startup and shutdown procedures, operations plan, and maintenance plan for your crushing/screening operation. If the given descriptions do not describe your operation or have left something out, please fill in the box marked other with this information. The applicant should make additional copies of any pages necessary to submit a complete O&M plan.

1. STARTUP AND SHUTDOWN PROCEDURES

a. Water Truck

i. Startup

☐ Check water supply, inspect nozzles and open all associated valves before startup.

☐ Other: _____

_____

_____

☐ Not Applicable

ii. Shutdown

☐ Inspect nozzles and close all associated valves after shutdown.

☐ Other: _____

_____

_____

☐ Not Applicable

b. Processing Plant Water Spray Dust Suppression

i. Startup

☐ Check water supply, inspect nozzles and open all associated valves before startup.

☐ Other: _____

_____

_____

☐ Not Applicable

FORM 5: OPERATION AND MAINTENANCE PLAN, CONTINUED

1. STARTUP AND SHUTDOWN PROCEDURES, CONTINUED

ii. Shutdown

☐ Inspect nozzles and close all associated valves after shutdown.

☐ Other: _____

☐ Not Applicable

c. Baghouse

i. Startup

☐ Visual inspection of: product lines, vent lines and all fittings, including dust shroud, baghouse blower.

☐ Other: _____

☐ Not Applicable

ii. Shutdown

☐ Check that all pressurized systems are off.

☐ Other: _____

☐ Not Applicable

d. Other Control Device:

i. Startup

☐ _____

ii. Shutdown

☐ _____

FORM 5: OPERATION AND MAINTENANCE PLAN, CONTINUED

2. OPERATIONS PLAN

a. Water Truck Operation

☐ Water truck to be operated simultaneous with pit and/or yard loading operations. These activities include; earth moving, unpaved haul roads, storage piles and inactive disturbed areas. Water spray application rate will be determined based on the occurrence of visible dust and may vary depending on existing road conditions, traffic, wind, temperature, and precipitation.

☐ Other: _____

_____

_____

☐ Not Applicable

b. Processing Plant Water Spray Dust Suppression Operation

☐ The water sprays will be utilized to control dust during material processing whenever the material is not adequately wet to prevent visible emissions from occurring in excess of the applicable opacity limits listed in the Crushing and Screening General Permit. Sprays will be located at designated screens, crushers, and transfer points and will be operated as needed to meet the applicable opacity limits listed in the Crushing and Screening General Permit. Visual opacity observations will be made regularly to verify proper functioning of equipment.

☐ Other: _____

_____

_____

☐ Not Applicable

c. Baghouse Operation

☐ The baghouse will be operated at all times when pertinent equipment is operating. The following parameters shall be monitored and recorded once daily during operation:

(1) Pressure drop between exhaust and inflow shall be maintained between _____ and _____ inches of water; and

(2) Damper setting shall be between _____ and _____ percent; and

(3) Stack exhaust temperature shall be below _____.

Visual opacity observations will be made regularly to verify proper functioning of equipment. When emissions are suspected to approach compliance values, equipment will be checked for problems.

☐ Other: _____

_____

_____

☐ Not Applicable

FORM 5: OPERATION AND MAINTENANCE PLAN, CONTINUED

2. OPERATIONS PLAN, CONTINUED

d. Other Control Device Operation:

☐ _____

3. MAINTENANCE PLAN

a. Water Truck Maintenance

☐ A safety check and equipment check will be conducted daily. Normal vehicle maintenance will be performed regularly or as needed.

☐ Other: _____

☐ Not Applicable

b. Processing Plant Water Spray Dust Suppression Maintenance

☐ The spray system will be checked daily for performance. Nozzles and valves will be cleaned or replaced as needed.

☐ Other: _____

☐ Not Applicable

c. Baghouse Maintenance

☐ Baghouse pressure and temperature gauges, flow meters, and other associated instruments will be checked daily for proper functioning. Abnormal readings will normally detect equipment failures or leaks. Any detected equipment failures will be remedied as soon as possible. Baghouse ducts, hoods, framework, and housing will be checked daily for signs of wear from corrosion, erosion, excessive heat, and excessive moisture when operating. Fan motor, and bearings, shaking device, reverse jet blow rings, valves, and dampers will be lubricated regularly and checked for wear.

☐ Other: _____

☐ Not Applicable

d. Other Control Device:

☐ _____

FORM 6: BACT DETERMINATION FOR INTERNAL COMBUSTION ENGINE OPERATION IN MARICOPA COUNTY

This form shall be filled by those applicants who have an intent to operate internal combustion engines in Maricopa County for periods greater than those listed in Attachment B, Section I(I)(1), and I(I)(2) of the General Permit. Internal combustion engines can operate for longer periods only if they employ Best Available Control Technology (BACT). Under normal circumstances, BACT is to be determined by ADEQ on a case-by-case basis. A top down analysis is generally required for ADEQ's evaluation. The applicant has the primary responsibility to conduct the top-down analysis which requires that all available control technologies are ranked in descending order of effectiveness along with associated costs. As an alternative, any internal combustion engine that complies with, or utilizes control technology recognized by the South Coast Air Quality Management District (SCAQMD) will be accepted by ADEQ as BACT. To be deemed as recognized by SCAQMD, a control technology has to be listed in the most currently dated version of the SCAQMD BACT Guidelines. The most currently dated version shall be determined based on the date of issuance of the Authorization to Operate under this General Permit. While completing this form, the applicant may use the version of the SCAQMD BACT Guidelines in effect on the date of filing the application. If the SCAQMD BACT Guidelines document is updated during the time it takes ADEQ to process the form, the applicant will be required to re-submit the form with the new BACT information, and other supporting data such as test results or manufacturer's guarantee. The applicant shall complete TABLE 15 below, and attach all supporting information including (i) Current version of SCAQMD BACT Guidelines for IC Engines, and (ii) Test data and/or manufacturer's guarantee that indicate the equipment is capable of meeting the BACT Standard.

Equipment ID and Capacity	NO_x BACT Standard	NO_x Test Results/Manufacturer's Guarantee**

**: THIS COLUMN MUST BE COMPLETED. SUPPORTING DATA SHOULD BE ATTACHED TO THE APPLICATION.

FORM 7: COMPLIANCE PLAN/CERTIFICATION

1. Applicant hereby affirms that it is in compliance with all applicable requirements of the General Permit and will continue to comply with such requirements.

2. For any additional applicable requirements that become effective during the term of the General Permit, Applicant affirms that it will meet such requirements on a timely basis.

3. The Applicant hereby affirms that it will submit a compliance certification once each year on September 30. The compliance certification shall describe the compliance status of the source with respect to each general permit condition and the methods used for determining the compliance status.

4. In order for the Applicant to be granted coverage under the General Permit, the Applicant must submit and agree to operate in accordance with an acceptable Operation and Maintenance (O&M) plan which identifies the procedures utilized to maintain its air pollution controls. If the Applicant is a Rental Company, the renter or lessee must submit the O&M plan to the Rental Company and agree to operate in accordance with it.

5. Applicant hereby affirms that it will operate its air pollution controls identified on FORM 4 in accordance with the O&M plan listed on FORM 5. If the Applicant is a Rental Company, the renter or lessee must agree to operate its air pollution controls identified on FORM 4 in accordance with the O&M plan listed on FORM 5.

Certification of Compliance and Truth Accuracy and Completeness

6. This certification must be signed by a Responsible Official. Applications without a signed certification will be deemed incomplete.

7. I certify that I have knowledge of the facts herein set forth and in this application, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Arizona Department of Environmental Quality as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the Arizona Administrative Code, Title 18, Chapter 2 and the Crushing/Screening General Permit or I will ensure that this responsibility is delegated to the renter or lessee by providing them a copy of the Crushing/Screening General Permit and relevant Authorizations To Operate (ATOs).

Typed or Printed Company Name: _____

Official Title of Signer: _____

Typed or Printed Name of Signer: _____

Signature of Responsible Official: _____ Date: _____

FORM 8: FEE RULE SUMMARY

Fee Rule Summary for Class II Sources

SOURCE

CLASS II

TITLE V

INDIVIDUAL

PROCESSING FEE
$66/hr No maximum Fee

ACCELERATED PERMIT APPLICATION FEE $15,000

ANNUAL FEE

Administrative

Synthetic Minor Sources - Except Portables

Aerospace:	$12,900
Cement plants:	$39,500
Combustion/Boilers:	$9,600
Compressor stations:	$7,900
Electronics:	$12,700
Expandable Foam:	$9,100
Foundries:	$12,100
Landfills:	$9,900
Lime Plants:	$37,300
Copper & Nickel Plants:	$9,300
Gold Mines:	$9,300
Mobile Home manufacturing:	$9,200
Paper Mills:	$12,700
Paper Coaters:	$9,600
Petroleum Products Terminal facilities:	$14,100
Polymeric Fabric Coaters:	$12,700
Reinforced Plastics:	$9,600
Semiconductors Fabrication:	$16,700
Copper Smelters:	$39,500
Utilities-Natural Gas:	$10,200
Utilities-Fossil Fuel except Natural Gas:	$20,200
Vitamin/Pharmaceutical Manufacturing:	$9,800
Wood Furniture:	$9,600
Others:	$9,900
Others with Continuous Emission Monitoring:	$12,700
Stationary Source:	$5,000
Portable Source:	$5,000
Small Source:	$500

GENERAL PERMIT

APPLICATION FEE $500

ANNUAL ADMINISTRATIVE FEE

Small Source:	$500
Others:	$3,000

NON TITLE V

INDIVIDUAL

PROCESSING FEE
$66/HOUR
$25,000 MAXIMUM FEE

ACCELERATED PERMIT APPLICATION FEE $15,000
$25,000 MAXIMUM FEE

ANNUAL INSPECTION FEE

Stationary Sources:	$3,250
Portable Sources:	$3,250
Gasoline Service Station:	$500

GENERAL PERMIT

APPLICATION FEE $500

ANNUAL INSPECTION FEE

Gasoline Service Station:	$500
Crematorium:	$1,000
Others:	$2,000

Notes:
There is no fee for transfers, administrative amendments, or 317 changes of permits.
The fee rate will be adjusted in the beginning of each year based on the CPI index.
Administrative and Inspection fees are due each year no later than March 31st or 60 days after the Director mails the invoice, whichever is later.
Information for this table was taken from the A.A.C. R18-2-326 and R18-2-511